EDUCATION AND HUMAN RESOURCES

The Directorate for Education and Human Resources (EHR) is responsible for the health and continued vitality of the Nation's science, mathematics, engineering, and technology education and for providing leadership in the effort to improve education in these areas.

The EHR Directorate supports programs and activities through the following:

- **Division of Educational System Reform (ESR)**
- **Division of Elementary, Secondary, and Informal Education (ESIE)**
- **Division of Graduate Education (DGE)**
- **Division of Human Resource Development (HRD)**
- **Division of Research, Evaluation, and Communication (REC)**
- **Division of Undergraduate Education (DUE)**
- **Experimental Program to Stimulate Competitive Research (EPSCoR)**

ⓘ For More Information

Visit the EHR Directorate home page, http://www.ehr.nsf.gov/.

Math and Science Partnerships Initiative

The Foundation will develop and implement a new programmatic activity for fiscal year 2002 called the Math and Science Partnerships Initiative (MSPI). MSPI will provide funds for States and local school districts to join with institutions of higher education, particularly with their departments of mathematics, science, and engineering, in strengthening mathematics and science education. It is designed to mobilize the mathematicians, scientists, and engineers of higher education to be part of the solution to improve K–12 education, to help raise mathematics and science standards; provide mathematics and science training for teachers; and create innovative ways to reach underserved schools and students. It emphasizes the need to ensure that all students have the opportunity to perform to high standards using effective, research-based approaches; improve teacher quality; and insist on accountability for student performance. One of its key objectives is to eliminate performance gaps between majority and minority and disadvantaged students.

Once available, more information on the upcoming MSPI will be available on the EHR Directorate's home page, http://www.ehr.nsf.gov.

DIVISION OF EDUCATIONAL SYSTEM REFORM

The Division of Educational System Reform (ESR) manages a portfolio of programs that encourage and facilitate coordinated approaches to systemic, standards-based reform of science, mathematics, and technology (SMT) education.

Systemic reform relies on partnerships to identify needs, articulate visions, and develop goals, strategies, and activities for improvement of targeted areas. Although each systemic initiative is unique in its approach, all must begin as a collaborative effort among individuals and organizations that are committed to requiring high expectations for all students through challenging educational opportunities. Systemic initiatives catalyze change and cultivate coordination within cities, States, rural areas, school systems, and other organizations involved with education. They result in a comprehensive impact on curriculum (inclusive of content, instruction, and assessment), policy, professional development, convergence of intellectual and fiscal resources, broad-based stakeholder support, and student performance.

The proposing organization develops a single plan of reform that must delineate the curriculum, professional development, and assessment components to ensure a transition to a high-quality, standards-based SMT education for all students. Awardees enter into cooperative agreements with NSF, specifying accountability for reaching the goals of a reform plan that must result in demonstrable and wide-ranging improvements in student achievement.

The ESR Division supports improvement in K–12 SMT education through the following programs and activities:

1. **Urban Systemic Program**
2. **Rural Systemic Initiatives**

There will be no competitions for either the Urban Systemic Program or the Rural Systemic Initiatives in fiscal year 2002.

ⓘ For More Information

Write to the Division of Educational System Reform, National Science Foundation, 4201 Wilson Boulevard, Room 875, Arlington, VA 22230; or contact the division by telephone, 703-292-8690; or visit the ESR home page, http://www.ehr.nsf.gov/EHR/ESR/index.htm.

1. Urban Systemic Program (USP)—
Urban school systems enroll more than half of all public school students in the United States. Although progress is being made in student achievement, there is a continuing disparity between the academic performance of urban students in science and mathematics and their counterparts in suburban schools. This disparity has been linked to a number of factors, including uneven allocation of resources; lack of highly qualified and experienced teachers; low enrollment in advanced courses; inadequate curricular materials; lack of good equipment and facilities; and few role models for students. Nevertheless, as measured by State and local criteria and norm-referenced tests, student achievement in science and mathematics showed significant gains, particularly at the elementary level. USP represents an effort to help urban school systems make deeper inroads into overcoming these factors while sustaining gains and advancing efforts through the high school level to improve student achievement.

Eligibility Requirements for USP

To be eligible, school districts must serve a central city and have a student population of at least 20,000. It is presumed that proposals for USP will originate from the Office of the Superintendent or other official who is

designated as the Chief School Officer. Proposals must meet a cost-share requirement of 20 percent of the proposed budget request. Importantly, school districts seeking USP support must show an established infrastructure for change; demonstrate that standards-based reform is significantly under way in the school system; and possess the ability to advance standards-based reform into full-scale implementation.

2. Rural Systemic Initiatives (RSI)— Seeks to promote systemic improvement in science, mathematics, and technology (SMT) education for students in rural and economically disadvantaged regions of the Nation. RSI is particularly concerned with those students who have been underserved by NSF programs. RSI seeks to ensure sustainability of improvements by encouraging community development activities in conjunction with instructional, policy, and resource restructuring.

Students in rural areas, particularly those characterized by high and persistent poverty, typically receive much less instruction in science and mathematics than do students in some suburban or urban classrooms. Moreover, societal conditions can be barriers that keep these students from achieving. Taken together, these circumstances negatively affect a child's chances of pursuing a postsecondary degree or career that could provide a better quality of life.

The premise of RSI is that a variety of educational, economic, and social factors must be aligned to significantly affect the achievement levels of students in disadvantaged circumstances. Therefore, RSI proposals must be submitted on behalf of consortia formed to address curriculum reform; teacher preservice and in-service education; policy restructuring, assessment, and implementation of national standards; and the economic and social well-being of the targeted regions.

The RSI program supports the following three categories of awards:

- **Development Awards—**The complexity of systemic educational reform generally requires discussion and planning. In addition, consensus-building is essential for successful implementation of a reform agenda. Development awards will be made to establish regional coalitions that have articulated visions and goals for educational improvement. They will typically support a self-study of the region; the development of baseline data; an in-depth study of proposed activities coupled with their feasibility in this context; articulation of implementation strategies; and determination of financial commitment of the relevant partners.

- **Implementation Awards—**While the establishment of regional coalitions is a key component, the primary goal of RSI is the successful and sustainable improvement of SMT education at the K–12 levels in rural, economically disadvantaged, remote, and sparsely populated areas. Proposers must have demonstrated readiness to achieve systemic educational reform through comprehensive planning that has (1) produced a regional vision for SMT education; (2) resulted in commitment to policy, fiscal, and instructional practice reforms on the part of the participating districts; (3) identified strengths and weaknesses in current programs; (4) secured local, State, and national resources, both public and private, to promote necessary change; and (5) focused on needed State and local policy changes to expedite reform.

- **Tribal Colleges and Universities Component—**In response to Presidential Executive Order 13021, White House Initiative for Tribal Colleges and Universities, the RSI Program established a separate competition for, and accepts proposals from, tribal colleges and universities (TCU's) to promote systemic reform in K–12 schools within their service areas. Activities funded under the TCU component are the same as those for the RSI Development or Implementation awards, but typically the TCU awards

target fewer school districts in their consortia.

Eligibility Requirements for RSI

Eligible school districts are those designated as "rural" or "small town" according to the U.S. Department of Education, National Center for Education Statistics, and in which greater than 30 percent of the school-age children are living in poverty. Proposing consortia should include representatives from State and local education agencies and schools and may include community colleges, business and industry, health and human service agencies, economic development agencies, private foundations, and 4-year colleges and universities.

DIVISION OF ELEMENTARY, SECONDARY, AND INFORMAL EDUCATION

Programs in the Division of Elementary, Secondary, and Informal Education (ESIE) work together to provide students, grades preK through 12, with access to quality science, mathematics, and technology (SMT) learning opportunities and increase scientific literacy for citizens of all ages. ESIE's education efforts are designed to promote the success of all students, regardless of their background, ability, or future education plans.

ESIE achieves its goals by supporting the development and implementation of high-quality instructional materials, as well as strategies to strengthen teacher competency in SMT content and pedagogy; to prepare students for transition from secondary school to higher education levels and the workplace; and to provide stimulating learning environments outside of school. Essential to achieving these goals are ESIE's efforts to rebuild and diversify the national infrastructure for SMT education; engage parents in their children's education; and promote the use of learning technologies for increasing access to quality education and addressing the varied learning styles of students. ESIE projects are built on collaboration among K–12, higher education, informal science, and business sectors, as well as meaningful partnerships of scientific and technical practitioners, SMT educators, and education administrators.

ESIE supports the following programs and activities:

1. **Teacher Enhancement**
2. **Centers for Learning and Teaching**
3. **Instructional Materials and Assessment Development**
4. **Informal Science Education**
5. **NSF After-School Centers for Exploration and New Discovery**
6. **Presidential Awards for Excellence in Mathematics and Science Teaching**
7. **Advanced Technological Education**

ⓘ For More Information

Write to the Division of Elementary, Secondary, and Informal Education, National Science Foundation, 4201 Wilson Boulevard, Room 885, Arlington, VA 22230; or contact ESIE by telephone, 703-292-8620, or by e-mail, ehr-esi-info@nsf.gov; or visit the ESIE home page, http://www.ehr.nsf.gov/ehr/esie/.

1. Teacher Enhancement (TE)—Supports professional development projects that promote strong conceptual understanding and instructional and leadership skills. These projects help build a supportive school culture that empowers teachers to engage all students in rich and challenging science, mathematics, and technology (SMT) education. The TE Program supports the following types of projects:

- **Local Systemic Change—**Supports school districts and their partners in reforming K–12 science and/or mathematics education. Local Systemic Change projects emphasize strategies that will lead to successful

implementation of national standards for content, teaching, assessment, programs, and systems. Projects include comprehensive or full-scale reform efforts and pilot efforts for building a foundation for reform through exploration of exemplary instructional materials, and for developing district leadership in SMT education.

- **Teacher Retention and Renewal—** Supports efforts to develop and retain an effective SMT instructional workforce. Projects are expected to develop cadres of teacher leaders within districts who can (a) serve as mentors to novice SMT teachers during their induction years and (b) act as change agents for implementing SMT programs that model standards-based teaching and provide professional development opportunities for peers.

- **Mathematics and Science Courses for Improving Teacher Qualifications—**Creates pilot courses for teachers who are currently (a) SMT teachers responsible for courses out of their field of certification; (b) SMT teachers with inadequate disciplinary backgrounds; and (c) SMT teachers seeking to provide instruction at another grade level. Courses should build on current research on teaching and learning and include instruments to assess participant learning and provide evidence of effectiveness.

- **Professional Development Materials—**Develops training materials for teachers and instructional SMT leaders in grades preK through 12. These materials address needs identified in major SMT education reform efforts, including enhancement of teachers' understanding; the adoption and implementation of standards-based teaching practices; and the use of state-of-the-art instructional materials, assessment strategies, and educational technologies.

- **Technology in Support of Professional Development—**Anticipates changes in the access to and capabilities of learning technologies. Projects develop technological tools to improve teaching and support instructional delivery; expand access to resources; and provide opportunities for interaction among education stakeholders (e.g., teachers, teacher educators, scientists, mathematicians, engineers, technologists, and informal science educators).

Eligibility Requirements for TE

The TE Program has special eligibility requirements beyond the standard NSF requirements. For more information, see program solicitation and guidelines NSF 01-60.

2. Centers for Learning and Teaching (CLT)—Addresses national issues critical to the K–12 instructional workforce through partnerships forged between the higher education and K–12 sectors. Supported centers must respond to each of the following goals: (a) increase the number of new and current K–12 educators who are prepared to facilitate standards-based science, mathematics, and technology (SMT) instruction; (b) rebuild and diversify the national infrastructure for K–16 education in science, mathematics, engineering, and technology; and (c) provide substantive opportunities for research on teaching and learning, education reform policies, and outcomes of standards-based reform in science and mathematics. Emphasis is placed on educating future generations of SMT teachers and professionals in content, instructional practices, assessment, research, evaluation, curriculum development, and informal education.

Eligibility Requirements for CLT

The CLT Program has special eligibility requirements beyond the standard NSF requirements. For more information, see program solicitation NSF 00-148.

3. Instructional Materials and Assessment Development (IMAD)—Supports the

development of materials and assessment strategies that are aligned with national standards and promotes improvement of science, mathematics, and technology (SMT) instruction at the preK through 12 levels. These materials should enable students to acquire sophisticated content knowledge, higher-order thinking abilities, and problem-solving skills.

IMAD-supported materials are designed for the success of all students regardless of their background, ability, or future education plans. They should promote students' positive attitudes toward SMT disciplines and students' positive perception of themselves as learners. By incorporating investigative, hands-on science and mathematics activities, the materials facilitate changes in the basic delivery of classroom instruction. Although demonstration models may be funded, projects are expected to be national in scope so that upon completion, the materials will be ready for use by teachers and students across the nation.

Eligibility Requirements for IMAD

The IMAD Program has special eligibility requirements beyond the standard NSF requirements. For more information, see program solicitation and guidelines NSF 01-60.

4. Informal Science Education (ISE)— Provides rich and stimulating opportunities for informal learner's that are designed to deepen their appreciation of science and technology and their understanding of the impact science and technology has on today's society. Major categories of projects include exhibits (in museums, science centers, zoological parks, arboreta, aquaria, and botanical gardens), media, and community-based programs. Projects generally develop materials and programs that reach large audiences and have the potential for significant regional or national impact.

The ISE Program promotes collaborative efforts, especially when such efforts bridge the informal and formal education communities. These collaborations allow partners to combine their resources and expertise to develop more effective strategies for reaching diverse target audiences, particularly underrepresented populations (e.g., minorities, women) and underserved areas (e.g., rural, inner city). ISE also strives to engage parents and other adults as proponents for quality SMT education.

Eligibility Requirements for ISE

The ISE Program has special eligibility requirements beyond the standard NSF requirements. For more information, see program solicitation and guidelines NSF 01-60.

5. NSF After-School Centers for Exploration and New Discovery (ASCEND)—Provides unique opportunities for middle and high school students to explore science, mathematics, and engineering in creative after-school and weekend programs. Projects are designed to interest youth in ongoing scientific discovery, as well as careers in science, mathematics, engineering, and technology.

Eligibility Requirements for ASCEND

The ASCEND Program has special eligibility requirements beyond the standard NSF requirements. For more information, see program solicitation and guidelines NSF 01-60.

6. Presidential Awards for Excellence in Mathematics and Science Teaching (PAEMST)—The PAEMST Program is operated by NSF on behalf of the White House. It is the Nation's highest honor for K–12 science and mathematics teachers. Since its inception in 1983, PAEMST has provided national recognition for nearly 3,000 outstanding elementary and secondary teachers of mathematics and science in the 50 States and U.S. territories.

Awardees participate in a recognition program in Washington, DC, where they are honored by the White House, NSF, other Federal agencies, the National Academy of Sciences, the business community, and various professional organizations. Awardees have received $7,500 from NSF to improve science or mathematics education in their schools and districts.

Eligibility Requirements for PAEMST

The PAEMST Program has special eligibility requirements beyond the standard NSF requirements. For complete information, visit the PAEMST web site, http://www.ehr.nsf.gov/EHR/ESIE/awards/default.htm.

7. Advanced Technological Education (ATE)—Is managed jointly by the ESIE Division and the Division of Undergraduate Education. ATE promotes improvement in the education of technicians in science- and engineering-related fields at the undergraduate and secondary school levels. It particularly targets 2-year colleges and encourages collaboration among 2-year colleges, 4-year colleges, universities, secondary schools, business, industry, and government. Proposals are solicited in the following three major tracks:

- **Projects—**Activities may include the design and implementation of new courses, laboratories, and educational materials; the adaptation and implementation of exemplary curricula and programs in new educational settings; the preparation and professional development of college faculty and secondary school teachers; internships and field experiences for students, faculty, and teachers; or national conferences, workshops, and similar activities focusing on issues in technological education.

- **Centers—**ATE Centers are comprehensive national or regional resources that provide models and leadership for other projects and act as clearinghouses for educational materials and methods. National Centers of Excellence engage in the full range of activities described above for projects. Regional Centers for manufacturing or information technology education pursue comprehensive approaches focusing on reforming academic programs, departments, and systems to produce a highly qualified workforce to meet industry's needs within a particular geographic region.

- **Articulation Partnerships—**These projects focus on enhancing either of two important educational pathways for students between 2-year colleges and 4-year colleges and universities. One type of Articulation Partnership focuses on strengthening the science, mathematics, and technology preparation of prospective K–12 teachers who are enrolled in preprofessional programs at 2-year colleges. The other type of Articulation Partnership targets 2-year college programs for students to continue their education in 4-year science, mathematics, engineering, and technology programs, especially programs that have a strong technological basis.

Proposals in all three tracks must show evidence of a coherent vision of technological education—a vision that recognizes the needs of the modern workplace, of students as lifelong learners, and for articulation of educational programs at different levels.

For More Information

Visit the ATE Program web site, http://www.ehr.nsf.gov/EHR/DUE/programs/ate/.

DIVISION OF GRADUATE EDUCATION

The Division of Graduate Education (DGE) provides support for graduate students,

postdoctoral fellows, and graduate education programs to ensure the strength, diversity, and vitality of the science and engineering workforce in the United States. DGE aims to enhance the flexibility and appropriateness of graduate programs at various levels in order to maintain the preeminence of American science, mathematics, and engineering and to strengthen the U.S. economy. Activities supported by the division fortify the links between higher education and K–12 education; recognize and support a diverse pool of outstanding individuals in their pursuit of advanced science, mathematics, engineering, and technology education; and support innovative models of graduate education.

DGE supports research and education through the following programs and activities:

1. **Graduate Research Fellowships (GRF)**
2. **Graduate Teaching Fellowships in K–12 Education (GK–12)**
3. **Integrative Graduate Education and Research Traineeships (IGERT)**
4. **NSF-NATO Postdoctoral Fellowships in Science and Engineering (NATO)**
5. **Travel Grants for NATO Advanced Study Institutes (ASI)**

ⓘ For More Information

Write to the Division of Graduate Education, National Science Foundation, 4201 Wilson Boulevard, Room 907, Arlington, VA 22230; or contact the division by telephone, 703-292-8630. For information, including program announcements and application forms, visit the DGE home page, http://www.ehr.nsf.gov/dge.

1. Graduate Research Fellowships (GRF)—Promotes the strength and diversity of the Nation's scientific and engineering base, and offers recognition and 3 years of support for advanced study to approximately 900 outstanding graduate students annually in all fields of science, mathematics, and engineering supported by NSF. For awards that will be used in academic year 2001–2002, the stipend for each fellow will be $18,000 for a 12-month tenure, and an annual cost-of-education allowance of $10,500 will be made available to the awardee's institution for each year of tenure, in lieu of tuition and fees.

Eligibility Requirements for GRF

To be eligible for this nationwide merit competition, an individual must be a citizen, national, or permanent resident of the United States, and at or near the beginning of graduate study.

ⓘ For More Information

For fiscal year 2002 applications, write to Oak Ridge Associated Universities (ORAU), NSF Graduate Research Fellowship Program, P.O. Box 3010, Oak Ridge, TN 37831-3010; or contact ORAU by telephone, 865-241-4300; or by e-mail, nsfgrfp@orau.gov.

Individuals are expected to apply through FastLane at http://www.fastlane.nsf.gov. Application forms and instructions are also available on the GRF web site, http://www.nsf.gov/grfp.

2. Graduate Teaching Fellowships in K–12 Education (GK–12)—In order to strengthen K–12 science and mathematics education, provide pedagogical training and experience for graduate students, and enhance links between K–12 and higher education levels, NSF initiated the GK–12 Program in 1999. GK–12 projects support graduate and advanced undergraduate science, mathematics, engineering, and technology (SMET) students as content resources for K–12 teachers. These Fellows assist teachers in the science and mathematics content of their teaching; demonstrate key science and mathematics concepts; and gain pedagogical skills necessary at all education levels. The activity links the acknowledged excellence of U.S. graduate education with the excitement and critical needs of K–12

learning and teaching, and promotes interest in teaching and learning practices among graduate level institutions.

Proposals may be submitted only by academic institutions that grant masters or doctoral degrees in SMET fields. GK–12 fellows, selected by awardee institutions, must be citizens, nationals, or permanent residents of the United States. They must be graduate students enrolled in SMET programs or advanced undergraduate SMET majors who have demonstrated a strong proficiency in mathematics and science.

For More Information

Visit the GK–12 Program web site, http://www.nsf.gov/home/crssprgm/gk12/.

3. Integrative Graduate Education and Research Traineeships (IGERT)—NSF places high priority on the preparation of Ph.D.'s who are equipped with the multidisciplinary background and the technical, professional, and personal skills essential to address the career demands of the future. To meet these needs, NSF created IGERT, an agency-wide graduate education program. Unlike Graduate Fellowships, for which individuals apply, IGERT considers only proposals from institutions that offer doctoral degrees.

The primary goal of the IGERT Program is to enable the development of innovative graduate education activities that are research-based and that will produce scientists and engineers who are well prepared for a broad spectrum of career opportunities. IGERT integrates research and education with emphasis on experimentation to yield a variety of new models for a paradigm shift in graduate education. Projects supported should incorporate the following features:

- a comprehensive, doctorate-level multidisciplinary research theme that serves as the foundation for graduate education activities;
- activities that integrate the multidisciplinary research theme with innovative educational opportunities, including training in the responsible conduct of research and interactions between students and faculty;
- an educational environment that exposes students to state-of-the-art research instrumentation and methodologies;
- an institutional strategy and operation plan for student recruitment, with special consideration for efforts aimed at members of groups underrepresented in science and engineering, to ensure preparation of a diverse science and engineering workforce; and
- a well-defined strategy for assessment of project performance.

For More Information

Visit the IGERT web site, http://www.nsf.gov/igert.

4. NSF-NATO Postdoctoral Fellowships in Science and Engineering (Including Special Fellowship Opportunities for Scientists from NATO Partner Countries)—At the request of the U.S. Department of State, NSF administers a program of NATO Postdoctoral Fellowships to promote a closer collaboration among scientists and engineers of member and NATO partner countries. Approximately 25 awards are made each year to visiting scientists and engineers from NATO partner countries to enable them to conduct research at institutions in the United States and to U.S. scientists or engineers to enable them to conduct research in other NATO member or NATO partner countries.

Eligibility Requirements for NSF-NATO Fellowships

U.S. citizens, nationals, and permanent residents who have received their doctoral degree in science and engineering within the past 5 years, or who will have done so

by the start of the fellowship, are eligible to apply for the program. Applications from citizens of NATO partner countries must be submitted through a principal investigator at a U.S. institution.

ⓘ For More Information

Send an inquiry via e-mail to nsf-nato@nsf.gov or visit the program's web site, http://www.ehr.nsf.gov/dge/programs/nato/.

5. Travel Grants for NATO Advanced Study Institutes (ASI)—NSF awards travel grants of $1,000 each to enable U.S. science and engineering graduate students and junior postdocs to attend select NATO Advanced Study Institutes held in the NATO member or partner countries of Europe. These 2- to 3-week instructional courses, conducted by noted scientists and engineers, are scheduled throughout the year, although the majority of them are held during the summer.

Eligibility Requirements for NATO Advanced Study Institutes

The director of a NATO Advanced Study Institute may nominate a U.S. citizen, national, or permanent resident who is a graduate student or who has received a Ph.D. within the past 3 years and has been accepted at a NATO institute.

ⓘ For More Information

Send an inquiry via e-mail to nato-asi@nsf.gov or visit the program's web site, http://www.ehr.nsf.gov/dge/programs/asi/.

DIVISION OF HUMAN RESOURCE DEVELOPMENT

The Division of Human Resource Development (HRD) within the Directorate for Education and Human Resources serves as a focal point for NSF's agency-wide commitment to enhancing the quality and excellence of science, mathematics, engineering, and technology (SMET) education and research through broadening participation by underrepresented groups and institutions. The Division's programs aim to increase the participation and advancement of underrepresented minorities and minority-serving institutions, women and girls, and persons with disabilities at every level of the science and engineering enterprise. These programs contribute to development of a diverse, internationally competitive and globally engaged workforce of scientists, engineers, and well-prepared citizens. Programs within HRD have a strong focus on partnerships and collaborations in order to maximize the preparation of a well-trained scientific and instructional workforce for the new millennium.

- **Minorities and Minority-Serving Institutions**
- **Women and Girls**
- **Persons with Disabilities**
- **Crosscutting**

ⓘ For More Information

Write to the Division of Human Resource Development, National Science Foundation, 4201 Wilson Boulevard, Room 815, Arlington, VA 22230; or contact the division by telephone, 703-292-8640; or visit the HRD home page, http://www.ehr.nsf.gov/EHR/HRD/default.asp.

MINORITIES AND MINORITY-SERVING INSTITUTIONS

Minority groups underrepresented in science, mathematics, engineering, and technology (SMET) disciplines include American Indians/Alaska Natives (Native Americans), African Americans, Hispanic Americans, and Native Pacific Islanders.

The Division of Human Resource Development's (HRD) supported efforts for minority and other students are focused on two major objectives: (1) developing students and (2) strengthening the research capabilities of minority institutions. HRD programs represent a coherent effort to stimulate organizational and institutional change; markedly improve the quality of educational opportunities available to minority and other students; and increase the quality and quantity of these students who are pursuing degrees in science, mathematics, engineering, and technology disciplines. Programs supporting minorities and minority-serving institutions are as follows:

1. **Historically Black Colleges and Universities–Undergraduate Program**
2. **Louis Stokes Alliances for Minority Participation**
3. **Alliances for Graduate Education and the Professoriate**
4. **Centers of Research Excellence in Science and Technology**
5. **Tribal Colleges and Universities Program**

1. Historically Black Colleges and Universities—Undergraduate Program— Seeks to enhance the quality of undergraduate science, mathematics, engineering, and technology (SMET) education at Historically Black Colleges and Universities as a means to broaden participation in the Nation's SMET workforce. The program provides support for the implementation of comprehensive institutional strategies to strengthen SMET teaching and learning in ways that will improve the access and retention of underrepresented groups in SMET. Typical project implementation strategies include SMET course and curricular reform and enhancement; faculty professional development; supervised research and other active learning experiences for SMET undergraduates; student support; scientific instrumentation to improve SMET instruction; and other activities that meet institutional needs.

Eligibility Requirements

Historically Black Colleges and Universities that currently offer associate, baccalaureate, or master's degrees in SMET fields but do not offer doctoral degrees in SMET disciplines are eligible.

For More Information

Visit the web site, http://www.ehr.nsf.gov/EHR/HRD/hbcu.asp.

2. Louis Stokes Alliances for Minority Participation (LSAMP)—Is designed to develop the comprehensive strategies necessary to strengthen the preparation of minority students and increase the number of minority students who successfully complete baccalaureates in science, mathematics, engineering, and technology (SMET) fields. This objective facilitates the long-term goal of increasing the production of Ph.D.'s in SMET fields, with an emphasis on entry into faculty positions.

The LSAMP Program requires each awardee to establish meaningful partnerships among academic institutions, and encourages the inclusion of Government agencies and laboratories, industry, and professional organizations. It is expected that successful partnerships will enable the development of approaches tailored to the institutional setting for achievement of program goals in SMET undergraduate education. Activities supported include student enrichment, such as collaborative learning, skill development, and mentoring; academic enrichment, such as curricular and instructional improvement; and direct student support, such as summer activities.

Eligibility Requirements

Academic institutions with a track record of educating minority and other students in SMET disciplines are eligible to apply to the LSAMP Program. Nonprofit organizations serve as members of the alliance or partnership.

For More Information

Visit the web site, http://www.ehr.nsf.gov/EHR/HRD/amp.asp.

3. Alliances for Graduate Education and the Professoriate (AGEP)—Seeks to significantly increase the number of American Indian/Alaska Native (Native American), African American, Hispanic American, and Native Pacific Islander students receiving doctoral degrees in the physical and life sciences, mathematics, and engineering (SME). The lack of role models and mentors in the professoriate constitutes a significant barrier to producing minority SME doctoral graduates, and NSF is particularly interested in increasing the number of minorities who will enter the professoriate in these disciplines.

Specific objectives of the AGEP Program are (1) to develop and implement innovative models for recruiting, mentoring, and retaining minority students in SME doctoral programs; and (2) to develop effective strategies for identifying and supporting underrepresented minorities who want to pursue academic careers.

The AGEP Program also supports a research effort to identify major factors that promote the successful transition of minority students from (1) undergraduate through graduate study; (2) course-taking in the early years of the graduate experience to independent research required for completion of a dissertation; and (3) the academic environment to the SME workplace. To accomplish this objective, the research component will be informed by a portfolio of Federal and private efforts in this arena in order to identify factors underlying exemplary as well as unsuccessful efforts.

Eligibility Requirements for AGEP

Alliances consisting of SME doctoral degree-granting institutions are eligible to apply to the program. One institution must be designated as the lead institution for the project. Institutions in the United States and its territories that have documented success in graduating minority students at the Ph.D. level are strongly encouraged to participate. Alliances are encouraged to establish partnerships with minority-serving undergraduate institutions to enhance recruitment efforts, where appropriate.

For More Information

Visit the web site, http://www.ehr.nsf.gov/EHR/HRD/agep.asp

4. Centers of Research Excellence in Science and Technology (CREST)—NSF recognizes that academic institutions with significant minority student enrollments play a vital role in conducting the research that contributes to our knowledge base in all disciplines and in educating minority students who go on to careers in the fields of science, mathematics, engineering, and technology (SMET).

The CREST Program makes substantial resources available to upgrade the capabilities of the most research-productive minority institutions. It develops outstanding research centers through the integration of education and research. In addition, it serves to promote the production of new knowledge; increase the research productivity of individual faculty; and expand a diverse student presence in SMET disciplines. CREST centers enhance the effectiveness of related science and engineering activities within the project's area of research focus.

Eligibility Requirements for CREST

Institutions eligible to participate in CREST Research Infrastructure Improvement (RII) awards must have the following:

- Enrollments of 50 percent or more members of underrepresented minority groups among those holding advanced degrees in science and engineering (e.g., Alaska Natives [Eskimo or Aleut], American Indian, African American, Native Pacific Islanders [Polynesian or Micronesian], Hispanic or Latino);

- Graduate programs in NSF-supported fields of science or engineering;

- Demonstrated strengths in NSF-supported fields, as evidenced by an existing or developing capacity to offer doctoral degrees in one or more science and engineering disciplines;

- A willingness and capacity to serve as a resource center in one or more research thrust areas;

- A demonstrated commitment and track record in enrolling and graduating minority scientists and engineers; and

- Strong collaborations in the proposed field of research.

For More Information

Visit the CREST web site, http://www.ehr.nsf.gov/EHR/HRD/crest.asp

5. Tribal Colleges and Universities Program (TCUP)—The TCUP Program provides awards to enhance the quality of science, mathematics, engineering, and technology (SMET) instructional and outreach programs, with an emphasis on the leveraged use of information technologies at Tribal Colleges and Universities, Alaska Native-serving institutions, and Native Hawaiian-serving institutions. Support is available for the implementation of comprehensive institutional approaches to strengthen SMET teaching and learning in ways that improve access to, retention within, and graduation from SMET programs, particularly those that have a strong technological foundation. Through this program, assistance is provided to eligible institutions in their efforts to bridge the digital divide and prepare students for careers in information technology, science, mathematics, and engineering fields. Proposed activities should be the result of a careful analysis of institutional needs, address institutional and NSF goals, and have the potential to result in significant, sustainable improvements in SMET program offerings. Typical project implementation strategies include curriculum enhancement, faculty professional development, undergraduate research and community service, academic enrichment, infusion of technology to enhance SMET instruction, collaborations, and other activities that meet institutional and community needs.

Eligibility Requirements for TCUP

Organizations eligible include Tribal Colleges and Universities, Alaska Native-serving institutions, and Native Hawaiian-serving institutions.

For More Information

Visit the web site, http://www.ehr.nsf.gov/EHR/HRD/tcup.asp.

WOMEN AND GIRLS

Program for Gender Equity in Science, Mathematics, Engineering, and Technology

All of the divisions within the EHR Directorate encourage projects that will increase the participation of women and girls in science and engineering. Because women are underrepresented in many disciplines, the Human Resource Development (HRD) Division supports research on focused interventions that are specifically directed toward increasing the number of women as full participants in the mainstream of the Nation's scientific and technological enterprise. The program supports the following activities:

- **Research—**This area seeks to enhance the multidisciplinary understanding of gender differences in human learning—behavioral, cognitive, affective, and social aspects—through sociopsychological, ethnographic, statistical, anthropological, economic, and organizational studies. The efforts in this area provide a research foundation for educational approaches, curriculum

materials, and technological tools that are already developed or can be developed in the future, bridging research and educational practice in settings such as classrooms, informal learning sites, and technological learning environments. The research aims to produce cumulative, reproducible, sustainable, and scalable results, supporting sustained improvement in educational practice.

- **Demonstration or "Model" Projects—**This area employs evaluation methods to determine the effectiveness of new learning tools, pedagogies, professional development programs, or student programs and services in order to produce outcomes. Demonstration projects apply research findings about girls' learning preferences in the design of new curriculum materials, services, pedagogy, or instructor development programs, which can be institutionalized and replicated if they are proven successful. In particular, teacher and faculty development demonstrations test new ways to integrate the understanding and awareness of gender-inclusive practices into preservice and in-service professional development programs and into professional standards and policies. It is anticipated that direct participants in demonstration projects will benefit from the learning experience and assimilate new behaviors.

- **Information Dissemination Activities—**This area supports projects that focus on the dissemination of research results or the dissemination of strategies for reducing the barriers for women and girls in these fields. Activities supported include media (e.g., videotapes and brochures), conferences, teleconferences, symposia, and workshops that bring together experts to discuss issues, projects, policies, and research related to the participation and achievement of women and girls in science, engineering, and mathematics. Dissemination projects take material or model approaches or information to a significant national audience.

ⓘ For More Information

Visit the PGE web site, http://www.ehr.nsf.gov/EHR/HRD/pge.asp.

PERSONS WITH DISABILITIES

Program for Persons with Disabilities (PPD)

PPD is dedicated to increasing the number of people with disabilities employed in the Nation's science, engineering, and technology workforce. To accomplish this, PPD supports projects designed to

- bring about needed changes in academic and professional climates;
- increase the awareness and recognition of the needs and capabilities of students with disabilities;
- promote the accessibility and appropriateness of instructional materials, media, and educational technologies; and
- increase the availability of student enrichment resources, including mentoring activities.

In short, efforts are dedicated to changing the factors wherein neglect, paucity, and indirection historically restricted the study of science and mathematics by students with disabilities and impeded the advancement of these individuals as they prepared themselves for careers in SMET fields. In support of the goals, and in recognition of findings from past activities, PPD is initiating support for regional alliances.

ⓘ For More Information

Visit the PPD web site, http://www.ehr.nsf.gov/EHR/HRD/ppd.asp.

CROSSCUTTING

Presidential Awards for Excellence in Science, Mathematics, and Engineering Mentoring (PAESMEM)

The White House established the PAESMEM Program to recognize the importance of role models and mentors in the academic, professional, and personal development of students from groups that are underrepresented in these fields. PAESMEM identifies outstanding mentors and mentoring programs that enhance the experiences of underrepresented students in the sciences, mathematics, and engineering. At the individual and the institutional levels, recipients of the PAESMEM award have been exemplary in their demonstration of the idea that the Nation must develop its human resources in these disciplines to the fullest extent possible through support of increased access by diverse populations.

Nominees, both individual and institutional, must have served as mentors or facilitated mentoring services for at least 5 years. Awards are made to (1) individuals who have demonstrated outstanding and sustained mentoring and effective guidance to a significant number of students at the K–12, undergraduate, or graduate level of education; and (2) institutions that have, through their programming, enabled a substantial number of students from groups traditionally underrepresented in science, mathematics, and engineering to pursue and complete relevant degree programs successfully (at the postsecondary level, these efforts must show that students have completed either a baccalaureate, master's, or doctoral degree).

ⓘ For More Information

Visit the PAESMEM web site, http://www.ehr.nsf.gov/EHR/HRD/paesmem.asp.

DIVISION OF RESEARCH, EVALUATION, AND COMMUNICATION

The Division of Research, Evaluation, and Communication (REC) provides a research-based foundation for teaching and learning in science, mathematics, engineering, and technology (SMET), using the results of research in technology utilization, content, pedagogy, assessment, and policy-oriented studies and indicators. The REC Division supports projects that investigate the learning process and integrate research with educational practices, including those that provide the groundwork for the effective use of technology. The division provides support for NSF's participation in the Interagency Education Research Initiative (IERI), various international comparative studies such as the Third International Mathematics and Science Study (TIMSS), and the EHR Directorate's participation in the agency-wide Faculty Early Career Development Program (see the CAREER home page, http://www.nsf.gov/home/crssprgm/career/start.htm). Through periodic program evaluations, REC activities also analyze the development, implementation, and impact of science and mathematics programming across the EHR Directorate.

The REC Division supports the following programs and activities:

1. **Research on Learning and Education**
2. **Evaluation**

ⓘ For More Information

Write to the Division of Research, Evaluation, and Communication, National Science Foundation, 4201 Wilson Boulevard, Room 855, Arlington, VA 22230; or contact the division by telephone, 703-292-8650, or by e-mail, REC@nsf.gov; or visit the REC home page, http://www.ehr.nsf.gov/EHR/REC.

1. Education Research—The REC Division sponsors a comprehensive education research program, Research on

Learning and Education (ROLE), to support the knowledge base that undergirds improvement in math and science instruction; provide more efficient use of educational technologies; and develop a more effective math and science instructional workforce. The ROLE Program supports research in several domains, including basic research in neural and cognitive sciences; teaching, learning, and institutional change processes; exploratory development of new instructional approaches; materials and implementation models whose impact can be systematically evaluated; studies of systemic factors in implementing educational innovations; policy studies; and collaborative research and development proposals on new and evolving information technologies.

2. Evaluation—Provides support for the assessment of NSF education and training programs and coordinates the evaluation of similar initiatives in other Federal agencies for the purpose of program improvement, accountability, and a generation of new knowledge for the education community at large. Evaluations are usually supported through competitively awarded contracts to outside organizations. Occasionally, the program solicits grant proposals for evaluative studies of NSF or other national science and mathematics programs of interest. The program may also accept proposals for the development of innovative techniques, approaches, and methodologies for the general improvement of education evaluation.

DIVISION OF UNDERGRADUATE EDUCATION

The Division of Undergraduate Education (DUE) serves as the focal point for NSF's efforts in undergraduate education. Whether preparing students to participate as citizens in a technological society; enter the workforce with 2- or 4-year degrees; continue their formal education in graduate school; or further their education in response to new career goals or workplace expectations, undergraduate education provides the critical link between the Nation's secondary schools and a society increasingly dependent on science and technology.

DUE's programs and leadership efforts aim to strengthen the vitality of undergraduate science, mathematics, engineering, and technology (SMET) education for all students, including SMET majors, prospective teachers of grades preK through 12, students preparing for the technical workplace, and students in their role as citizens in society at large.

Projects submitted to programs in DUE are encouraged to incorporate, as appropriate, features that address one or more of four themes that have been targeted for special emphasis. These themes are (1) teacher preparation, (2) professional development for faculty, (3) increasing diversity within SMET fields, and (4) integrating technology in education. Although the activities described below are expected to constitute the majority of projects supported through DUE, proposals that address other mechanisms for improving undergraduate SMET education will be considered.

DUE supports the following programs and activities:

1. **Advanced Technological Education**
2. **Assessment of Student Achievement in Undergraduate Education**
3. **Course, Curriculum, and Laboratory Improvement**
4. **Federal Cyber Service: Scholarship for Service**
5. **NSF Computer Science, Engineering, and Mathematics Scholarships**
6. **NSF Director's Award for Distinguished Teaching Scholars**
7. **National Science, Mathematics, Engineering, and Technology Education Digital Library**
8. **Science, Technology, Engineering, and Mathematics Teacher Preparation**

For More Information

Write to the Division of Undergraduate Education, National Science Foundation, 4201 Wilson Boulevard, Room 835, Arlington, VA 22230; or contact the division by telephone, 703-292-8670, or by e-mail, undergrad@nsf.gov; or visit the DUE home page, http://www.ehr.nsf.gov/EHR/DUE/.

1. Advanced Technological Education (ATE)—Is managed jointly by DUE and the Division of Elementary, Secondary, and Informal Education. The program promotes improvement in the education of technicians in science and engineering related fields at the undergraduate and secondary school levels. It particularly targets two-year colleges and encourages collaboration among 2-year colleges, 4-year colleges, universities, secondary schools, business, industry, and government. Proposals are solicited in the following three tracks:

- **Projects—**Activities may include the development of educational materials, courses, curricula, and laboratories; the preparation and professional development of college faculty and secondary school teachers; internships and field experiences for students and educators; or the dissemination of exemplary educational materials, curricula, and pedagogical practices designed by previously funded ATE centers and projects.

- **Centers—**ATE centers are comprehensive national or regional resources that provide models and leadership for other projects and act as clearinghouses for educational materials and methods. National Centers of Excellence engage in the full range of activities described above for projects. Regional Centers for manufacturing or information technology education pursue comprehensive approaches that focus on reforming academic programs, departments, and systems to produce a highly qualified workforce to meet industry's needs within a particular geographic region.

- **Articulation Partnerships—**These projects focus on enhancing either of two important educational pathways for students between 2-year colleges and 4-year colleges and universities. One type of Articulation Partnership focuses on strengthening the science, mathematics, and technology preparation of prospective K–12 teachers who are enrolled in preprofessional programs at 2-year colleges. The other type of partnership targets 2-year college programs for students to continue their education in 4-year science, mathematics, engineering, and technology programs, especially programs that have a strong technological basis.

Proposals in all three tracks must show evidence of a coherent vision of technological education—a vision that recognizes the needs of the modern workplace, the needs of students as lifelong learners, and the need for articulation of educational programs at different levels. Whenever feasible, projects are expected to utilize and innovatively build from successful educational materials, courses, curricula, and methods that have been developed through other ATE grants, as well as other exemplary resources that can be adapted to technological education.

For More Information

Visit the ATE Program web site, http://www.ehr.nsf.gov/EHR/DUE/programs/ate/.

2. Assessment of Student Achievement (ASA) in Undergraduate Education—Supports the development and dissemination of assessment practices, materials (tools), and measures to guide efforts that improve the effectiveness of courses, curricula, programs of study, and academic institutions in promoting student learning in science, mathematics, engineering, and technology (SMET). ASA seeks to support

the use of assessment practices by SMET faculty, SMET departments, and institutional administrators seeking to measure student achievement in courses, curricula, programs of study, and the cumulative undergraduate experience embodying some SMET learning.

To help ensure that project results will effectively serve the SMET community, at least one investigator (PI or co-PI) in a project must be a SMET faculty member. Projects can focus on one or more of the following broad areas:

- developing new and adapting extant assessment materials that can be used to improve SMET courses and curricula to achieve explicit learning objectives;

- developing methods for assessing student achievement resulting from a group of courses constituting a minor or major field of study;

- assessing the impact on student achievement of interdisciplinary learning experiences, student teams, cocurricular activities (e.g., service learning), increased laboratory and field experiences, and other forms of learning enrichment; and

- developing indicators of student learning within certain domains, and measures of institutional program quality.

ⓘ For More Information

Visit the ASA Program web site, http://www.ehr.nsf.gov/EHR/DUE/programs/asa/.

3. Course, Curriculum, and Laboratory Improvement (CCLI)—Supports projects that are expected to improve undergraduate science, mathematics, engineering, and technology education (SMETE) by increasing the availability and use of high-quality educational materials and the employment of effective pedagogical strategies. Proposals that address all levels of undergraduate education are encouraged; proposals to improve introductory-level courses, curricula, and laboratories are especially welcome.

The CCLI Program invites proposals to improve undergraduate SMETE in a broad spectrum of institutions, including 2-year colleges, 4-year colleges, and universities. Projects may involve a single institution, a collaborative effort among several institutions, or a collaboration with business and industry partners. The CCLI Program has three major tracks:

- **Educational Materials Development Track—**Projects are expected to produce innovative materials that incorporate effective educational practices to improve student learning of SMET. Projects to develop textbooks, software, or laboratory materials for commercial distribution are appropriate. Two types of projects will be supported: (1) those that intend to demonstrate the scientific and educational feasibility of an idea, a "proof of concept," or a prototype; and (2) those that are based on prior experience with a prototype that they intend to fully develop the product or practice. Such materials are expected to be disseminated nationally for adoption and adaptation.

- **Adaptation and Implementation Track—**Projects are expected to result in improved education in SMET at academic institutions through the adaptation and implementation of exemplary materials, laboratory experiences, and educational practices that have been developed and tested at other institutions. Proposers may request funds in any category normally supported by NSF, or funds only to purchase instrumentation.

- **National Dissemination Track—**Projects are expected to provide faculty with professional development opportunities to enable them to introduce new content into undergraduate courses and laboratories and to explore effective educational practices. Projects should be designed to offer workshops, short

courses, or similar activities on a national scale in single or multiple disciplines.

ⓘ For More Information

Visit the CCLI Program web site, http://www.ehr.nsf.gov/EHR/DUE/programs/ccli/.

4. Federal Cyber Service: Scholarship for Service (SFS)—Seeks to increase the number of qualified students entering the fields of information assurance and computer security and to increase the capacity of higher education enterprise in the United States to continue to produce professionals in these fields. The program consists of the following scholarship and capacity-building tracks:

- **Scholarship—**Provides funding to colleges and universities to award scholarships in information assurance and computer security fields. Scholarship recipients will become part of the Federal Cyber Service of information technology specialists who ensure the protection of the United States Government's information infrastructure. After their 2-year scholarships, the recipients will be required to work for a Federal agency for 2 years as their Federal Cyber Service commitment.

- **Capacity Building—**Seeks to increase the national capacity for producing trained information assurance professionals by providing support to colleges and universities interested in building programs, individually or in partnership.

ⓘ For More Information

Visit the SFS Program web site, http://www.ehr.nsf.gov/EHR/DUE/programs/sfs/.

5. NSF Computer Science, Engineering, and Mathematics Scholarships (CSEMS)—Provides institutions with funds to support scholarships for talented but financially disadvantaged students in computer science, computer technology, engineering, engineering technology, or mathematics degree programs. Through support from this program, grantee institutions establish scholarships that promote full-time enrollment and completion of degrees in higher education in the above fields. NSF established the program in accordance with the American Competitiveness and Workforce Improvement Act of 1998 (Public Law 105-277). The Act reflects the Nation's need to increase substantially the number of graduates from associate, baccalaureate, and graduate degree programs in these fields. The goals of this program are to

- improve education for students in the stated disciplines;
- increase retention of students to degree completion;
- improve professional development, employment, and further higher education placement of participating students; and
- strengthen partnerships between institutions of higher education and related employment sectors.

The eligibility criteria for a CSEMS scholarship recipient include the following:

- must show status as a U.S. citizen, national, refugee alien, or permanent resident alien at the time of application;
- full-time enrollment in a computer science, computer technology, engineering, engineering technology, or mathematics degree program at the associate, baccalaureate, or graduate level;
- demonstrated academic potential or ability; and
- demonstrated financial need, defined for undergraduates as financial eligibility under U.S. Department of Education rules for Federal financial aid, and defined for graduate students as eligibility for Graduate Assistance in Areas of National Need.

CSEMS institutional proposers must be institutions of higher education that grant

degrees in computer science, computer technology, engineering, engineering technology, or mathematics.

For More Information

Visit the CSEMS Program web site, http://www.ehr.nsf.gov/EHR/DUE/programs/csems/csems.htm.

6. NSF Director's Award for Distinguished Teaching Scholars (DTS)—DTS recognizes individuals with demonstrated excellence and promise of future success in both scientific research and the education of undergraduates in science, mathematics, engineering, and technology (SMET). The program promotes the continued and expanded efforts of individuals with a history of impact on both (a) the research in a SMET discipline or on SMET educational research; and (b) the SMET education of undergraduates, including those who are not SMET majors. The Director's Award is the highest honor bestowed by the NSF for excellence in both teaching and research in SMET fields, or in educational research related to these disciplines.

For More Information

Visit the DTS Program web site, http://www.ehr.nsf.gov/EHR/DUE/programs/dts/.

7. National Science, Mathematics, Engineering, and Technology Education Digital Library (NSDL)—Supports the creation and development of a national digital library for science, mathematics, engineering, and technology education (SMETE). The resulting virtual facility—learning environments and resources network for SMETE—is intended to meet the needs of students and teachers at all levels: K–12, undergraduate, graduate, and lifelong learning, in both individual and collaborative settings. The NSDL Program builds on work supported under the multiagency Digital Libraries Initiative (see http://www.dli2.nsf.gov/) and represents a synergistic collaboration of research and education efforts.

The NSDL Program is currently supporting a Core Integration effort that coordinates and manages the digital library's holdings and services. To complement and further expand this Core Integration capacity, the NSDL Program accepts proposals in the following tracks:

- **Collections—**Projects are expected to aggregate and manage a subset of the library's content within a coherent theme or specialty.
- **Services—**Projects are expected to develop services that will support users, collection providers, and the Core Integration effort, as well as enhance the impact, efficiency, and value of the library.
- **Targeted Research—**Projects are expected to explore specific topics that have immediate applicability to one of the other two tracks, or the Core Integration effort discussed above.

For More Information

Visit the NSDL Program web site, http://www.ehr.nsf.gov/EHR/DUE/programs/nsdl/.

8. Science, Technology, Engineering, and Mathematics Teacher Preparation (STEMTP)—Supports efforts to develop exemplary science and mathematics preK–12 teacher preparation models through partnerships involving science, mathematics, engineering, technology, and education faculty at 2- and 4-year institutions of higher education and local school districts. The goals of the program are to

- increase significantly the number of preK–12 teachers who are certified and well qualified to teach mathematics and science, and

- improve the quality of preservice education, induction, and continued professional growth in mathematics and science for preK–12 teachers.

Projects must address local needs for increased numbers of teachers who are well qualified to teach mathematics and science by providing strategies for recruiting and retaining teachers in the workforce. The STEMTP Program offers the following two areas of focus:

a. Baccalaureate and 5-Year Programs—Projects are expected to include strategies for ensuring that preservice students acquire SMET content and pedagogical knowledge and skills for successful teaching.

b. Alternative Pathways to Teaching—Projects are expected to design and implement alternative credentialing programs for SMET professionals and recent SMET graduates to facilitate their entry into the teaching profession.

ⓘ For More Information

Visit the STEMTP Program web site, http://www.ehr.nsf.gov/EHR/DUE/programs/stemtp/.

EXPERIMENTAL PROGRAM TO STIMULATE COMPETITIVE RESEARCH

The Experimental Program to Stimulate Competitive Research (EPSCoR) increases the research and development (R&D) competitiveness of 21 States and the Commonwealth of Puerto Rico. The States are Alabama, Alaska, Arkansas, Hawaii, Idaho, Kansas, Kentucky, Louisiana, Maine, Mississippi, Montana, Nebraska, New Mexico, Nevada, North Dakota, Oklahoma, South Carolina, South Dakota, Vermont, West Virginia, and Wyoming.

EPSCoR offers two types of funding, and an accompanying outreach program supports improvements in R&D competitiveness:

- **EPSCoR Research Infrastructure Improvement Awards—**Provide 36-month awards of up to $9 million to support infrastructure improvements in science and technology areas selected by the State's EPSCoR governing committee as being important to the State's future R&D competitiveness.

- **EPSCoR Cofunding—**Provides partial support for proposals that have been reviewed at or near the cutoff for funding by regular programs and special initiative competitions throughout NSF.

- **Outreach—**Involves senior NSF personnel working with EPSCoR researchers and their institutions to acquaint them with NSF priorities, programs, policies, and procedures.

ⓘ For More Information

Write to EPSCoR, Directorate for Education and Human Resources, National Science Foundation, 4201 Wilson Boulevard, Room 875, Arlington, VA 22230; or contact the program by telephone, 703-292-8683, or by e-mail, jhoehn@nsf.gov; or visit the EPSCoR home page, http://www.ehr.nsf.gov/epscor/.